Archival Biases and Cross-Sharing

Marianne Ping-Huang

Bio

Marianne Ping Huang is Associate Professor at School for Communication and Culture, and Development Officer for Cultural Creative Collaborations and Digital Humanities at Faculty of Arts, Aarhus University. She is Danish National Coordinator with DARIAH-EU (European Digital Research Infrastructure for Arts and Humanities) and co-chairs DARIAH Research and Education.

Abstract

Transnationale institutioner og organisationer åbner i disse år for adgang til og ikke mindst brug af digital kulturarv. Der tales i den forbindelse om økosystemer af interessenter og projekter, mens man tidligere fokuserede mere ensidigt på teknologisk opbygning af infrastrukturelle systemer. Dette skift hen imod netværksbaserede og sociale infrastrukturer med vægt på produktion og post-produktion, åbner for nye samarbejdsformer, men udfordrer også policy-styrede rammer for digital videnproduktion og -deling. En af de helt væsentlige udfordringer er at gøre viden, der stammer fra mindre, eksperimenterende projekter (som fungerer inden for et økosystem af mange interessenter), tydelig og produktiv inden for en større ramme og dermed fremme en diversificeret deling og samskabelse af viden.

Marianne Ping-Huang, Associate Professor
Institut for Kommunikation og Kultur,
Aarhus Universitet, mph@dac.au.dk

Introduction

> "Although barriers still remain to the opening up of cultural and creative content, including issues with institutional strategies, and the major problem of copyright clearance for Orphan Works which is shaping which periods of cultural content are available for use and analysis, the following years will continue to see an exploration of how best to use open cultural and heritage content, showing that open data and open research is not just applicable in the sciences, but can open the door to our collections, our institutions, and an understanding of our shared cultural heritage" (Terras 2015, p. 25).

For almost two decades our major archives and archival institutions have been changing rapidly, due to digitization of the GLAM sector (galleries, libraries, archives, and museums). This change has been-and continues to be-supported by national as well as transnational policy frameworks supporting digital transformation of access to digital-based resources, materials and knowledge production. As accessibility and distribution gain momentum in the GLAM sector, digital heritage organizations increasingly explore new modes of knowledge production. We witness a shift in institutional discourses within a field formerly dominated by archiving for preservation and storage, and mainly oriented towards knowledge production for research. Enhanced by new broader perspectives on societal value and innovation impact, GLAM institutions and organisations-as well policy-driven frameworks-now aim to

expand the life cycles of digital collection, preservation, storage, access, and production that can be used for wider distribution, and not least re-used in new contexts. The enhances in use and impact of digitized cultural heritage to some extent remind us of the cultural politics of the welfare state from mid-1960s into the 1970s, which started out as a public service broadcast model (communication from one to many), democratizing culture through widened access, but which by the early 70s shifted to a "many-to-many" model-building on local workshops and community art, with a focus on diversified production and access to the means of production. Both models still thrive, in public service organizations on the one hand and in community based art and culture centers on the other. However, both models also face challenges from cuts to public funding, from new indicators for impact, and not least, from subsequent new business models in the cultural creative sector. Today, significantly, local arts and culture centers also cater to cultural entrepreneurship and creative industry.

The shift from public access to crowd-production in re-use of archival resources is already familiar and Wikipedia is a good example of this. Of no less interest is the way critical studies and diversified communities of practice may impact more abstract frameworks for cultural heritage ecosystems and platforms. In her ground-breaking work, Tara McPherson has not just written on, but also practiced a new way of impacting archival and database models, informed by critical studies' focus on difference and humanities research workflows (see McPherson, 2010).

McPherson points to the fact that archival structures are never objective, and that an archival vision of exhaustiveness and total order is anything but un-biased. She also points to the ways database structures are different from analogue archival ones, stressing how relational databases have furthered modularity and lessened contextuality in knowledge production. This development creates a divide between technological development of digital research infrastructures on the one hand and scholarly practices of critical thinking and practices on the other. It also obscures the blind spots for race and gender that are historically embedded in technology-enhanced archival access and knowledge production in a digital transformation:

> "Certain modes of racial visibility and knowing coincide or dovetail with specific ways of organizing data: if digital computing underwrites today's information economy and is the central technology of post-World War II America, these technologized ways of seeing and knowing took shape in a world also struggling with shifting knowledges about and representations of race" (McPherson, 2012).

My focus in this article will be on the shift that is currently taking place from policy frameworks for enhancing public access to digitized cultural heritage (mainly through portals). This shift calls for critical analysis and for deeper knowledge of different ways of producing and sharing knowledge as pointed to by McPherson, and for an understanding of how knowledge of such diversification (in other words knowledge of context) may impact the policy frameworks and transnational organizations, now bordering on a new cultural heritage modus. This new cultural heritage modus refers to the ongoing opening-up and connecting-of the GLAM sector to wider knowledge ecosystems. The article will also focus on frameworks for enhancing communities of practice-and production-in multi-stakeholder ecosystems for cultural knowledge production, particularly those supported on cultural heritage and research platforms. One notable example of how contexts for cultural heritage practice may disrupt policies for public heritage access is the Mukurtu CMS projects (highlighted in McPherson 2010). Mukurtu builds on knowledge of how heritage may be made accessible within indigenous communities: (as opposed to outside) indigenous communities:- "not all information wants to be accessible" (McPherson 2010). This is a disruption of more abstract definitions of cultural heritage as that privilege, first and foremost, accessibility to a wider audience. But it adheres to local community practices safekeeping for with the purpose of sharing. Mukurtu now provides an open source platform for creating archives and community platforms, facilitating workshops and showcasing eight cultural heritage projects.

The GLAM sector and the knowledge institutions, which used to be embedded in closely-knit knowledge systems mainly catering to research and public audiences, are now framed within larger ecosystems that include broadcasters, creative industries and various commercial fields such as food, fashion,

and photography. This shift from closed-and often publically funded-circuits to networked commercial channels is among other things illustrated by a new cultural heritage discourse in which the concept of "resource", for instance, is branching out into new "communities of practice," and the new emphasis on "new markets", "new stakeholders" or "new partners" for emerging "value chains" within in business plans for digital cultural heritage organizations.Thus, resources within a narrower knowledge system, catering mainly for *Bildung*, are thus opened up to layered communities, including crowdsourcers and citizen scientists for creative re-use and re-mix, and business models and plans are targeting impact rather than output.

Significantly, these larger knowledge economies and digital ecologies aim at other types of communication and production than the traditional cultural heritage economies, in particular emphasizing distributed interaction between providers, users, and re-use communities and industries. The ecologies (and data management) are cross-sectorial and aim at enhancing feedback between public and private spheres and between multi-stakeholder clusters. One might mention Google and Amazon, but what I will focus on here are transnational governmental platforms catering for cultural heritage use and re-use, largely within a public service model: European organizations for digital heritage, for GLAM, and for digital transformation in research and higher education. What we see in strategies and business plans for such framework entities is a shift in the organizational discourse and the way in which the operational model is envisioned - from a tech-based focus on construction, building and development and collections of tools to social networked formations based on notions of sharing, life cycles and ecosystems. This shift emphasizes an opening up of knowledge systems in the GLAM sectors, and points to a new public-private economy for culture and creative industries. The very openness is, however, also challenged, if it turns out to lack contextual knowledge of the diversified stakeholders and objectives included in or connected to the ecosystem. In the following I will describe framework mechanisms that enhance this shift, as well as projects designing and developing within these new business models.

Frameworks for knowledge life cycles

Melissa Terras' recent article "Opening Access to Collections" (2015, cited above) on the interdependencies of Open Access Publishing and Open Access for digital cultural heritage examines a number of very tangible and acute barriers to open access and open sharing of digital content. Regulative barriers and institutional biases, as well as blind spots in our concepts of knowledge production, are discussed with much enthusiasm. It is an enthusiasm driven-in spite of the barriers-by a trust in the common good resulting from the opening up of both the GLAM sector and knowledge institutions. Terras advocates for the production of common knowledge and an understanding of "our shared cultural heritage", echoing the UNESCO *Charter on the Preservation of Digital Heritage* (UNESCO 2003), which cites digital heritage as a "unique [resource] of human knowledge and expression," the preservation of which will strengthen research, knowledge exchange and cultural encounter. Common knowledge and understanding form the rationale for enhancing openness and connectivity in digital ecosystems of cultural knowledge production in ways recognizable from mid-twentieth century policy frameworks. Those policy frameworks democratized cultural heritage and knowledge production, promoting dissemination of history and heritage to strengthen *Bildung*, cultural identity, and the formation of national and transnational communities. What differs is that digital ecologies of heritage and knowledge resources now allow for feedback and enrichment by machine reading in addition to human knowledge production, creating new formats and, notably, big data. Even in the limited ecosystems such as digital heritage archives and research-based knowledge production, new "value chains" have evolved, calling for new institutional frameworks for data management of collecting, processing, analyzing, publicizing, preserving, sharing, and re-using data.

Terras' approach-as well as transnational frameworks for digital heritage management such as UNESCO and Europeana (the digital heritage organization created by the European Commission)-are still based in a narrower system of digital heritage content-providing and digital knowledge production. Yet, as I will describe, these are also entering a larger ecosystem of emergent co-creation and creative economies.

Developing a Framework for a Growing Ecosystem: Europeana

Europeana forms a transnational policy and organizational framework for the European GLAM sector and was first conceptualized in 2005 as a European Digital Library, underpinned in 2007 by the European Committee on Culture and Education's report *Towards a European Digital Library*. With a vision for pan-European (multilingual) digital library access, Europeana has developed into a portal for European cultural heritage and, most recently, into a partner-based distributed platform, catering to designated professional users and producers (as well as to featured groups of end-users). Partners are national public providers, but additional partners are included in the framework, both broadening the range of the system and differentiating actors within the system by way of how resources are put to use. In the Europeana Business Plan (2014), the shift from portal to platform is branded as a shift from a service for access ("portals are for visiting") to a service for active co-creation ("platforms are for building upon") (Europeana, 2014, p. 5):

> "This means less focus on inviting individuals to europeana.eu portal and much more on developing who re-use the data, content, knowledge and technology that Europeana and its partners make available for them. This shift is essential to enable a future that will be read-write, where you will be able to take and give back to your community" (2015).

The Europeana Business Plans for 2013-2015 show a gradual enhancement of re-user services, balancing (out) services for end-users. This scaffolding for a larger ecosystem follows a growing focus on cultural creative value chains and multiple stakeholder interests in both digital content and digital practices within the GLAM sector. The Europeana Business Plan (2015), entitled Make the Beautiful Thing, highlights the creative industry as a target sector as well as three key markets for digital heritage resources:

> Europeana has sharpened its re-use market approach and target audience definitions. For most value, we will work primarily with:
> - *Creative industries - developers, designers, makers and entrepreneurs* who come up with new product and service ideas based on re-use of cultural heritage content,
> - *Selected distribution partners* - key players in the target markets who have the domain expertise and the large-scale outreach to the relevant user audiences,
> - *Three main markets: education, research and tourism* - Through our wide partner network, we could also reach out and explore other markets, such as fashion, photography or food and drink (Europeana, 2015, p. 18).

Europeana seeks "new markets" through partnerships and infrastructural initiatives, two of which are run, respectively, through Europeana Research, catering to research communities, and Europeana Labs, which will proactively explore creative re-use:

> "This entrepreneurial arm will include facilitated co-creation in physical labs and workshops, crowdfunding of good ideas and reaching out to investors with help from two partners: Platoniq and Peacefulfish. Our main performance indicators in this area will be the amount of inspiring applications that we will showcase on Labs (100) and the establishment of at least 6 distribution partnerships" (Europeana, 2015, p. 6).

The Europeana Business Plan (2015) advocates a business model and key performance indicators for the GLAM sector based on how resources are put to work, balancing dissemination output with co-creation impact. Whereas end-users may be counted in access hits, the new market of creative industries is measured by impact in the number of applications created through co-creation in labs. The enlargement of the digital cultural heritage and knowledge system by re-user communities builds on the shift in conceptualizing and business modelling for resource management in the digital cultural heritage sectors. It goes beyond digital heritage archives and infrastructures as technologies providing preservation, storage and access (portal models) to engaging archival and knowledge techniques in partnership structures, facilitating designated professional communities of practice. However, as mentioned above, a really successful partnership structure (building on a productive network of communities of practice) will call for partnerships to critically examine the contexts for knowledge retrieval, production and re-use within a diversified field of communities of practice. No framework has ever created an ecosystem.

While the UNESCO *Charter on the Preservation of Digital Heritage* spoke of bridging the digital divide for accessing cultural heritage and focused on the scalability of end-user communities (bridging gaps in technology as well as in education and economics), the new enlarged and enhanced ecosystems of digital content target sustainability, resilience, and emergent innovation in connected digital life cycles. As the vision for the universal archive-with all resources stored, preserved and accessible through a global portal-is transgressed in favor of distributed platforms with select audiences, featured collections, and professional markets, a new knowledge economy emerges, one that may be among other things enabled by transnational digital frameworks such as Europeana. What is at stake now is an institutional acceptance of another model for relational dynamics than what is found in the relational database. Archival systems-as ecosystems-will prove dynamic if they are able to include pockets of disorder, patterns of fragmentation, and local practices of knowledge production.

Gatekeeping a Knowledge Life Cycle

The above described policy-driven frameworks for large-scale digital cultural resource ecosystems haveper tradition-been linked to research-based knowledge production. These traditionally impact small or smaller life cycles of Humanities disciplines, research fields and communities and catering to high quality research output. For the last ten years, these life cycles have been enhanced by digital research infrastructures that provide tools and services for higher education research, training, and teaching. Cultural heritage research in the Humanities is also driven by national and transnational frameworks for digital transformation, as well as by communities of practice who create standards of cross-disciplinary and cross-sectorial partnerships, establishing the technological developments for long term preservation, persistent identifiers, metadata standards, and APIs. Knowledge institutions are in ongoing negotiations with intellectual property rights organizations and legislators about open source, open access, intellectual property rights and data security for researchers, teachers, and students. However, the way Humanities disciplines and research fields are positioned in the larger ecosystems of cultural creative production and re-use indicates that life cycles are no longer upheld only by publishing (knowledge production), but also by re-purposing resources in connected life cycles. This calls for an acceptance of knowledge-*based* production in facilitating research for a critically-informed practice that interacts with knowledge communities other than peers.

To digital platforms like Europeana, Humanities researchers are just one among other professional re-use communities. In the Europeana Business Plan (2015), research communities figure in parallel with creative and tech industries as well as with crowdsourcing and maker communities. Europeana Research will cater to research by enhancing the quantity and quality of research output, which will again impact Open Access Publishing (Terras 2015), now adopted as a pan-European framework. The impact potential is great, as only small numbers of Humanities research output is Open Access. The old ways of a gatekeeping culture for research output are still strong. With open access publishing, knowledge institutions need time to implement national frameworks and recommendations, as well as time to enter research production and data into data management models, which would cater to re-use in a larger ecosystem. Also lacking are assessment frameworks for new formats of research output such as datasets, visualizations and publishing in audio and video formats. These are all structures and formats that would cater to new research impact and further the role of knowledge production and institutions within a larger ecosystem. Research access to large-scale digital resources as well as research impact measures have an effect on larger ecosystems of transdisciplinary fields. Moreover, cross-sectorial partnerships are largely dominated by institutional strategies and business plans as well as by national or transnational programs, regulations, and agreements. On a national level, culture agencies, research councils and national road maps cater to digital infrastructures and digitized resources; on a transnational level we find equivalent structures in large framework organizations such as Europeana and Horizon2020 ESFRI (the European Strategy Forum for Research Infrastructures).

In her article on research infrastructures for the Humanities and Social Sciences (2014), Milena Fuchs outlines the challenges of visibility and impact faced by Humanities digital research infrastructures, comparing them with Science research infrastructures. Humanities research infrastructures are not as visible

due to their scale and organization. They are often language-dependent and thus (content-wise) connected to national research. Additionally, they rely on messy or unstructured data, they are often organized as smaller networks rather than coherent structures, and their communities of practice are small and discipline-oriented. Fuchs references a manifesto by young researchers in the Digital Humanities (*Young Researchers in Digital Humanities: A Manifesto*, 2013) calling for Humanities research institutions and organizations to take exactly the same measures as the development of Europeana. That is, they advocate shifting from a digital library to a distributed platform. The young researchers highlight a lack of institutional acknowledgement for "flourishing digital practices" and a lack of momentum to create a framework for assessment of digital outputs (including databases and software). Both failures indicate institutional blind spots in understanding how the life cycle of Humanities research may connect to a larger ecosystem. The young researchers suggest that the Humanities digital transformation is an emerging resource, with impacts upon a larger ecosystem:

> "The Digital Humanities reflect the transition of the Humanities to the digital age. However, they do not only bring with them new technical means, but also new forms of knowledge creation and dissemination within, across and outside academic disciplines" (2013).

There are no doubt urgent challenges-barriers, biases, and blind spots-for the digital transformation of the Humanities and other institutions. These reflect the endeavor (Dusa et al, 2014) to shape research infrastructures, which may work well within the larger ecosystem of digital cultural heritage and knowledge: the shaping of new partnership models for sustainability, collaboration, new data sources, and data protection. In this respect, emerging value chains of cultural heritage knowledge are still kept within an often very discipline-oriented system. They remain very much tied-metaphorically speaking-to the model vision for a global digital library or to a well-organized and orderly database-structure for exhaustive and objectified knowledge.

Meshworks in the Ecosystem

There are, however, communities of cross-institutional and sectorial practice to be found within the larger ecosystems, connecting archives and collections with academic knowledge production and creative prototyping for new applications. Returning to Tara McPherson and how she practices "post-archival" criticism, one example of such communities of practice is the *Vectors* journal, established in 2005. *Vectors* forms an experimental space for multimodal, performative and immersive scholarship focusing on interactive screen languages for scholarly workflows and knowledge production, underpinned by archival resources. In effect, *Vectors* proposes a number of non-linear publication formats, rich for ongoing investigation. Last, but not least *Vectors* forms a cross-sectorial experimental test bed called the Scalar software. The community of practice around *Vectors* journal and Scalar grew into the Alliance for Networking Visual Culture, continuing the experiments on both new scholarly publication formats and curation of archives. Experiments with the Scalar software, based in community contexts and critical approaches, were also conducted. Often, such small-scale communities are hard to sustain, but are vital to the larger ecosystems because they provide evidence for how Humanities research connects through critical knowledge and in cross-sectorial experiments. They might also, should they prove sustainable and scalable, become of crucial importance to the larger ecosystem as they develop new archival modes, new knowledge, and new solutions for the digitally-enhanced cultural heritage and knowledge life cycles.

Another community of practice, comparable to the *Vectors* journal community, is described in the work of PhD fellow Theis Vallø Madsen, whose focus is Danish artist Mogens Otto Nielsen's mail art archive at Kunsten Museum for Modern Art. Madsen's fellowship is a joint venture between the Art History department at Aarhus University and Kunsten Museum, who have collaborated in order to research, document and create a digital archival structure and interface for the mail art collection at Kunsten. The collection has been archived in suspension file folders in the museum's basement storage-well-preserved, but in many respects rather inaccessible. Indicative of the 1950s and 1960s mail art movement, the collection contains a large number of small artworks and ephemera as well as documentation of how the networked art movement was disseminated by way of an official, transnational infrastructure or communication system: the postal service. Artworks in formats that would fit in envelopes would be dis-

tributed within the network, adhering to a framework formulated by (among others) Mogens Otto Nielsen, who stamped art objects with the following "artistic commons" declaration: "ALL REPRODUCTION MODIFICATION DERIVATION AND TRANSFORMATION OF THIS OBJECT IS PERMITTED." He also formulated a Ten Commandments for mail art:

1. MAIL ARTISTS DO NOT CARE WHO DID IT FIRST
2. MAIL ARTISTS DO NOT CARE WHO DID IT BEST
3. MAIL ARTISTS DO IT FOR EACH OTHER NOW
4. MAIL ARTISTS GO BEYOND LIMITATIONS
5. MAIL ARTISTS DO NOT COMPETE IN PUBLIC WHO DID IT BEST
6. MAIL ARTISTS DO NOT ACCEPT REWARDS FOR DOING IT
7. MAIL ARTISTS DO NOT REJECT ANYBODY
8. MAIL ARTISTS DO IT INTERNATIONALLY
9. MAIL ARTISTS BUILD ON THE INTERNATIONAL NETWORK OF CONFIDENCE
10. MAIL ARTISTS ARE COMING BY MAIL (cited in Madsen, 2014, p. 242).

As such, the Mogens Otto Nielsen collection gives access to new research knowledge about, in the words of Craig Saper, "networked art" by 60s avant-garde collective art movements, their extra-institutional practices, as well as their transnational communities of practices. But the collection and its underlying modes of communication and sharing also reflect on contemporary knowledge systems. In the words of Madsen:

> "The principles of mail art are reminiscent in peer-to-peer networking, hypermedia, creative commons, crowdsourcing, and open-source, not to mention a growing group of galleries, libraries, archives, and museums concerned with sharing content and knowledge. Consequently, findings from Mogens Otto Nielsen's mail art archive might give us an insight into non-digital avant-garde experiments with sharing, including the risks and costs." (2014, p. 241)

In the process of documenting and researching the Mogens Otto Nielsen archive, Theis Vallø Madsen formed partnerships with artists, storage providers, and platform developers, as well as interaction designers, dramaturges, and museum professionals. This is an example of a multi-stakeholder community for open innovation, inclusive of both big providers, institutional entities, and small or micro industries.[1] The process included creating a database for 16,000 digitized artworks and other artifacts from 600 artists representing 42 countries. The research and application design involved in prototyping for a visualization interface work with both curated tags (metadata) and user-generated tags, and render the digital archive a dynamic, interactive tool. Also, informed by Madsen's research on the collection and its underlying structures, the archival structure and the application aims to model the way mail art was communicated, mapping connectivity in the archive. Madsen conceptualized this with reference to the concept of "the meshwork" (Ingold in Madsen, 2014), building on traces of movement weaving a structure, rather than the structure of the network:

> "The visualisation was partly based on the idea of the meshwork. The patterns and curved lines between nodes were created at random within a specific range of numerical values. The image of the "meshwork" as described by Scottish Anthropologist Tim Ingold was a way to avoid the conventional image of networks with nodes and point-to-point connections of straight lines. Networks have no center, only nodes, but every node is usually depicted as a closed-in, self-contained entity where we are somehow beamed from one node to the next" (Madsen, 2016 accessed 2016-01-29).

Meshwork may also be a metaphor for the formation of a multi-stakeholder community for open innovation practices. I would claim that such partnerships or communities will be essential for public-private innovation in the cultural heritage sector and are indicative for how creative re-use will fuel larger ecosystems, connecting large public institutions, creative industries and as well as individual creatives and artists. Evidence of how access, production and re-purposing in such communities will enhance innovation and new value-chains is still largely lacking, though we may find models for critical research impacting practice (for example Wikipedia as presented in this issue, or Tara McPherson's work on archival biases from code to context). There persists, however, a significant gap to fill, in terms of policy making.[2]

Other Creators and Providers

Things are consequently changing by way of large frameworks and communities of practice. Institutions are opening up, targeting both public and public-private partnerships for innovation and designated markets. Digital transformation has certainly enhanced knowledge production and changed our practices and partners in the production and re-use of resources and knowledge. If not the frameworks, then communities of practice and their NGOs will point to access not just for resources, but also for production facilities.

As a signature public service broadcaster, the BBC has been spearheading changes surrounding access and sharing of archival resources. For instance, it has worked for a Creative Archive License to put audio-visual resources into the public domain, and has also opened up institutional archives of historical interest to the public. Not surprisingly, suggestions for opening production facilities-that is, forming platform partnerships-have also been addressed towards the BBC, as in a recent blogpost by NESTA CEO Geoff Mulgan on "How BBC could become a more open, collaborative organization":

> "It involves moving from being primarily a monolithic, direct provider of content and services to becoming both a provider and an open platform: an enabler of others and sharing its assets, resources and access to audiences, as the quid pro quo for the continued privilege of raising a license fee. In the past the BBC often resisted any hint of change. But recent announcements suggest more openness - potentially having non-BBC content on iPlayer, for example - and there are important steps being made towards a more open model in fields like the arts and education. […] The central argument is that the BBC needs to add to its historic mission of educating, informing and entertaining, an additional goal of empowering - using its resources to energise a surrounding ecology of other creators and providers" (Mulgan, 2015).

Geoff Mulgan gives six recommendations for how BBC might cater to other communities, inviting co-creation. What is interesting about Mulgan's approach is that he advocates for a new type of public service in his recommendations: support for creative economies, support for hyperlocal media, providing spaces for open research and open source innovation, providing a health knowledge commons, providing access to the best educational materials, opening up creative innovation in arts and culture. These cover a wide horizon of public good, from enhancement of employability, to development of skills and access to educational materials, through to ground-up community engagement and open innovation.

Access to heritage and knowledge resources has been the focus in the first cycle of archival digital accessibility initiatives. In another, access is for re-use and implies user involvement for enriching resources and to a certain extent also a re-invention of the accessible workshop, lab or test bed facility. Dating back to welfare state cultural politics of the 70s, this latter cycle goes beyond research, teaching and knowledge dissemination; impact measures of co-creation and stakeholder-engagement, or "other creators and providers," will add to output measures. Part of what Geoff Mulgan asks of BBC is targeted at large frameworks and the GLAM sector (see Sanderhoff, 2014).

At the "Sharing is Caring" conference of 2015, Melissa Terras spoke on "Taking, Making and Law-Breaking: copyright, digitised content, and the digital maker movement," sharing her experiences as a digital DIY maker.[3] In relating her practice-led intervention into the Spoonflower toolbox, in which she designed fabrics with patterns by remixing cultural heritage images, Terras stressed that if heritage institutions are not making their resources available and putting high quality resources into the public domain, "people are taking and doing things with it anyway." She also addressed the issue of co-creation with a wider audience by pointing to the obligation of heritage institutions to curate collections of high quality for makers and kitchen-table innovators, focusing on these communities rather than on the research communities of cultural historians (Terras, 2015).

Terras' main point is that we face a growing gap between, on the one hand, regulated access for high-quality digitized heritage resources curated for knowledge production, and on the other hand, large and growing communities of prosumers, makers, and co-creators that will find and use cultural heritage images, sounds, texts-regardless of whether these resources are in the public domain or not. Immate-

rial rights, copyrights, and standards for digitized resources may be what uphold institutional gatekeeping of access, use and re-use of archival material, but the knowledge cycle in which these high-quality resources are deployed may prove too restrictive and unsustainable in the face of a wider ecology of everyday searching, finding, sharing and producing. On the other hand, this wider ecology may lack the quality of knowledge, reflection and critique arising from a more narrow cycle between heritage archives and knowledge institutions. As gaps and divides in the knowledge economy are being bridged by policy frameworks and transnational organizations, we also acknowledge that the creation of knowledge and the making of culture is a layered-or better-a *meshed* enterprise that can generate experiments, diversification, and pockets of disorder instigated by crowdsourcing communities and cross-sectorial critical co-creation.

Notes

1. The mail art project around Mogens Otto Nielsen's archive with partners, research based design for prototyping and knowledge production are documented with Theis Vallø Madsen: *From the archive*, http://mailartarchive.com Kunsten. Museum for Modern Art

2. See for example KEA European Affairs' *Feasibility study on data collection and analysis in the cultural and creative sectors in the EU*, 2015 (http://www.keanet.eu/wp-content/uploads/CCS-Stats-Study_final-30092015.pdf?4f4eb7), for both gap analysis and recommendations for alternative data creation and analysis.

3. Watch video of Melissa Terras' talk at Sharing is Caring 2015: Rights to Remix at http://sharecare.nu/video/

References

The Alliance for Networking Visual Culture (2016). Retrieved 9 Feb 2016 from http://scalar.usc.edu/

Dusa, A, Oellers, C & Wolff, S (2014). A Common Agenda for the European Research Infrastructures in The Social Sciences and Humanities. In: *Facing the Future. European Research Infrastructures for the Humanities and Social Sciences,* Ed. A. Dusa, D. Nelle, G. Stock and G. Wagner. Berlin: SCIVERO Verlag.

European Committee on Culture and Education. (2007). Towards a European Digital Library. Retrieved 15 Jan 2016 from http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A6-2007-0296+0+DOC+PDF+V0//EN

Europeana (2015). Research Infrastructures, retrieved 15 Jan 2016 from http://ec.europa.eu/research/infrastructures/index_en.cfm

Europeana (2013). Business Plan. Retreived 15 Jan 2016 from http://pro.europeana.eu/files/Europeana_Professional/Publications/Europeana%20Business%20Plan%202013.pdf

Europeana (2014). Business Plan. Retrieved 15 Jan 2016 from http://pro.europeana.eu/files/Europeana_Professional/Publications/Europeana%20Business%20Plan%202014.pdf

Europeana (2015). Business Plan. Retrieved 14 Jan 2016 from http://pro.europeana.eu/files/Europeana_Professional/Publications/Make%20the%20Beautiful%20Thing%20Business%20Plan%202015.pdf

Fuchs, MZ (2014). Research Infrastructures in the Humanities: The Challenges of 'Visibility' and 'Impact'. In: A. Dusa, D. Nelle, G. Stock and G. Wagner (Eds.): *Facing the Future. European Research Infrastructures for the Humanities and Social Sciences,* Berlin: SCIVERO Verlag.

Madsen, TV (2014). Sharing is Avant-Garde. In: M. Sanderhoff (ed.): *Sharing is Caring. Openness and sharing in the cultural heritage sector*, Copenhagen: Statens Museum for Kunst.

Madsen, TV (2016): *From the archive*. Retrieved 17 Jan 2016 from http://mailartarchive.com

McPherson, T (2010). *Post-archive: Scholarship in the Digital Age*. Retrieved 8 Feb 2016 from http://library.brown.edu/create/digitaltalks/lectures/post-archive-scholarship-in-the-digital-age-by-tara-mcpherson/

McPherson, T (2012). Why Are the Digital Humanities So White? or Thinking the Histories of Race and Computation. In: *Debates in the Digital Humanities*. Retrieved 8 Feb 2016 from http://dhdebates.gc.cuny.edu/debates/text/29

Mukurtu CMS. Retrieved 9 Feb 2016 from http://mukurtu.org/

Mulgan, G (2015). How BBC could become a more open, collaborative organisation, NESTA Blog. Retrieved 17 Dec 2015 from http://www.nesta.org.uk/blog/six-ways-bbc-could-become-more-open-collaborative-organisation

KEA European Affairs (2015). *Feasibility study on data collection and analysis in the cultural and creative sectors in the EU*. Retrieved 25 Jan 2016 from http://www.keanet.eu/wp-content/uploads/CCS-Stats-Study_final-30092015.pdf?4f4eb7

Sanderhoff, M (2014). This belongs to you. In: Merete Sanderhoff (ed.): *Sharing is Caring. Openness and sharing in the cultural heritage sector*, Copenhagen: Statens Museum for Kunst.

Terras, M (2015). Opening Access to Collections: the Making and Using of Open Digitised Cultural Content. Online Information Review 2015. Special Issue on Open Access: Redrawing the Landscape of Scholarly Communication, edited by G. E. Gorman and J. Rowley.

UNESCO (2003). *Charter on Preservation of Digital Cultural Heritage.* Retrieved 15 Jan 2016 from http://portal.unesco.org/en/ev.php-URL_ID=17721&URL_DO=DO_TOPIC&URL_SECTION=201.html

Vectors Journal. Retrieved 9 Feb 2016 from http://vectorsjournal.org

Young Researchers in Digital Humanities: A Manifesto (2013). Retrieved 10 Jan 2016 from http://dhdhi.hypotheses.org/1855